

### ABSTRACT

Data transmission is optimized in a wireless digital communication system including a base station and a plurality of user equipment mobile terminals (UEs). Adaptive modulation and coding (AM&C) is employed to achieve improved radio resource utilization and provide optimum data rates for user services. Blocks of downlink (DL) data are received by the base station which requests downlink DL channel quality measurements only from those UEs with pending downlink transmissions. The UEs respond to the request by measuring and reporting DL channel quality to the base station, which then allocates resources such that the UEs will make best use of radio resources. The base station notifies the UEs of the physical channel allocation indicating the modulation/coding rate and allocated slots followed by transmission of blocks of downlink data which are transmitted to the UEs.